

REMARKS

Claims 1-17, 31-35, 41-45, 48, 60-77, 91-95, 101-105, 108 and 121-136 remain pending. Claims 18-30, 36-40, 46, 47, 78-90, 96-100, 106 and 107 have been withdrawn from consideration by the Examiner responsive to a Restriction Requirement. A Request for Reconsideration appears below, in this regard. Claims 34, 35, 43-45, 94, 95 and 103-105 have been indicated as being allowable by the Examiner, but for their dependence from a rejected base claim. Certain other ones of the claims have been amended to further emphasize what Applicant regards as patentable differences over the art of record, as well as for purposes of correcting typographical oversights. Applicant appreciates the Examiner's consideration of the Application.

REQUEST FOR RECONSIDERATION

The rationale given by the Examiner in support of making the Restriction Requirement final is not understood by Applicant. In particular, the Examiner states that Applicant's argument is not found persuasive because the species are mutually exclusive. Applicant, however, has asserted that claims 1-5, 43-45, 48, 60-65, 91-95, 103-105, 108, 121-123, 128-130 and 134-136 are considered as being generic and are considered to read on species A-D, I and J. Moreover, since the species were defined by the Examiner in terms of various ones of Applicants figures, each generic claim also reads on multiple figures. That is, each generic claim reads on each figure that assertedly is representative of each species. In view of the foregoing, Applicant submits that the general test, that is described by MPEP 806.04(f), has not been met with respect to the asserted mutual exclusivity of species. Accordingly, reconsideration of the propriety of the restriction requirement is respectfully requested.

THE § 103 REJECTIONS

The Examiner rejected claims 1-17, 31-33, 41, 42, 48, 60-77, 91-93, 101, 102, 108 and 121-136 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent no. 6,047,107 issued to Roozeboom et al (hereinafter the '107 patent). Applicant respectfully traverses at least for the reasons given below.

Initially considering the limitations of claim 1, as amended, a treatment object includes a given emission spectrum at a treatment object temperature which causes the treatment object to produce a treatment object radiated energy. A heating arrangement is used for heating the treatment object using a heating arrangement radiated energy having a heat source emission spectrum at a heat source operating temperature which heat source emission spectrum is different from said given emission spectrum of the treatment object. Chamber defining means is provided for use in exposing the treatment object to a portion of the heating arrangement radiated energy, while supporting the treatment object within a treatment chamber, such that a first fraction of the heating arrangement radiated energy and a second fraction of the treatment object radiated energy are incident on a wall arrangement which forms part of the chamber defining means, and at least a portion of the wall arrangement is configured for responding in a first way to a majority of the first fraction of the heating arrangement radiated energy that is incident thereon while that portion of the wall arrangement simultaneously responds in a second way to a majority of the second fraction of the treatment object radiated energy that is incident thereon, based on a difference between the heat source emission spectrum and the given emission spectrum of the treatment object.

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As part of Applicant's invention, the heating arrangement has a different emission spectrum than the object that is being treated. This is shown in Applicant's figure 1 and described in detail by the specification with reference thereto. In attempting to meet this limitation, the Examiner refers to col. 4, lns. 47-64 of the '107 patent as assertedly disclosing a heat source emission spectrum that is different from an emission spectrum of the treatment object. Applicant respectfully disagrees with this characterization of the '107 patent. In particular, the description at this point in the patent contains no mention of emission spectra of either the heating source or the wafer. What is being described is merely the potential use of different heating zones which employ a "switchable" reflector. Applicant finds no reasonable teaching, disclosure or suggestion of the use of a heating arrangement having an emission spectrum that is different from the emission spectrum of the treatment object. Accordingly, for this reason standing on its own, allowance of claim 1 is respectfully requested. Applicant further submits that there are additional compelling reasons which favor the allowance of claim 1, as amended, over the art of record, as will be discussed immediately hereinafter.

With respect to the original recitation, in amended claim 1, of a first fraction of the heating arrangement radiated energy and a second fraction of the treatment object radiated energy being incident on a portion of the wall arrangement such that the portion of the wall responds in associated first and second ways thereto, the Examiner again refers to col. 4, lns. 47-64 of the '107 patent. The claim has been amended in a way that is intended to emphasize the way in which the present invention distinguishes over the '107 patent. In this regard, it is important to understand that Applicant is not claiming the use of different zones that act in different ways. What Applicant is claiming is a region that simultaneously acts differently based on the spectral characteristics of light incident on that region. More particularly, the difference between the source emission spectrum and the treatment object emission spectrum causes this portion of the chamber to respond differently, on the specific basis of this spectral difference. In effect, one "zone" advantageously acts simultaneously in two different ways. The cited portion of the '107 patent merely describes the use of separate regions or zones which behave in different ways.

Further, Applicant submits that the '107 patent describes a switchable reflector configuration that is not described in terms of responding simultaneously in different ways to heat source energy and treatment object radiated energy. Applicant finds descriptions only of changing the behavior of the described configuration through switching and not responsive to spectral considerations. That is, Applicant finds no description which reasonably would lead one to believe that one zone is acting in different ways, on the basis of the spectral content of energy that is incident thereon. Accordingly, for at least these reasons, allowance of claim 1 over the '107 patent is respectfully requested.

Claims 2-17, 31-33, 41, 42, 48 and 60 each depend either directly or indirectly from and therefore include the limitations of amended claim 1. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to claim 1. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of claim 1, further distinguish the claimed invention from the art of record.

For example, claim 2 recites that the portion of the wall arrangement is configured to respond in the first way by reflecting said majority of the heat source radiated energy and to respond in the second way by absorbing said majority of the treatment object radiated energy. Claim 3 further recites that the chamber defining means presents a first reflectance spectrum to the first fraction of said heat source radiated energy and presents a second, different reflectance spectrum to the second

fraction of the treatment object radiated energy. In attempting to meet these limitations, the Examiner refers to col. 2, lns. 16-31 and col. 3, lns. 30-40 of the '107 patent. Applicant respectfully disagrees. Col. 2, lns. 16-31 appears to Applicant to describe the use of a film in the context of switching between two different states, it does not describe Applicant's use of a specific portion of the chamber to act as an absorber with respect to the treatment object radiated energy while simultaneously acting as a reflector for the heat source radiated energy. Col. 3, lns. 30-40, appears to merely provide further details with respect to the use of the switching film. Accordingly, Applicant respectfully submits that claims 2 and 3 are allowable over the art of record, when viewed in any reasonable light.

As another example, claim 4 recites that the portion of the wall arrangement reflects more than about 75% of the heat source radiated energy while absorbing more than about 75% of the treatment object radiated energy. Similarly, claim 5 recites that the portion of the wall arrangement reflects more than about 60% of the heat source radiated energy while absorbing more than about 60% of the treatment object radiated energy. In this regard, the Examiner suggests that the '107 patent discloses all but the general conditions of the claim. Applicant respectfully disagrees. As described above, the '107 patent fails with respect to reasonably teaching, disclosing or suggesting a portion of the chamber which acts in two distinct ways with respect to different energy fractions that are simultaneously incident thereon. In particular, the '107 patent merely describes the use of a switchable configuration. Accordingly, for at least these reasons, allowance of claims 4 and 5 is respectfully requested.

As still another example, claim 6 recites that at least said portion of said wall arrangement includes an inner layer of material which responds at least in said second way. The Examiner, in attempting to meet this limitation, refers to the switching device of the '107 patent. What is important to understand, however, is that the inner layer also provides for the simultaneous response in the first way. Applicant respectfully submits that the configuration taught by the '107 patent is not described as being capable of such response, when viewed in any reasonable light. Accordingly, allowance of claim 6 is respectfully requested.

As a further example, claim 10 recites that the inner layer includes at least one of aluminum oxide and titanium dioxide. Claim 11 recites that the inner layer includes an oxide of at least one element. In attempting to meet this limitation, the Examiner refers to col. 4, lns. 4-7 and 12-15 of the '107 patent, which describes a "counter or second electrode". This electrode is illustrated as item 4 in figure 2 of the patent and, clearly, is an intermediate, rather than an inner layer. Accordingly, withdrawal of the rejection of claims 10 and 11 over the '107 patent is respectfully requested.

Claim 13 recites that the inner layer includes a polymer. Claim 14 further adds that the polymer contributes at least partially to the response of the wall arrangement in at least one of the first way and the second way. Claim 15 requires that the inner layer includes a filler with the polymer. Applicant finds no mention of a polymer in the cited portion of the '107 patent, nor the additional detailed limitations that are encompassed by these claims. Accordingly, allowance of claims 13-15 is respectfully requested.

Claim 16 depends directly from claim 15 and requires detailed features wherein the polymer includes a selective reflectivity characteristic and the filler modifies the selective reflectivity characteristic of the polymer as a base coating material. Claim 17 further recites that the filler includes at least one of aluminum oxide particles, titanium dioxide particles,

glass particles, and glass fibers. Applicant finds no mention of selective reflectivity in the cited portion of the '105 patent or these detailed features with respect to modification by a filler. Accordingly, allowance of claims 16 and 17 is respectfully requested.

Claim 48 recites that the wall arrangement includes an inner surface arrangement having a surface roughness that at least contributes to said chamber responding in the first and second ways. Applicant again disagrees that the general conditions of the claim have been disclosed, since Applicant finds no teaching, disclosure or suggestion in the '107 patent that is reasonably related to using an inner surface roughness that contributes to chamber response in the recited manner. Accordingly, allowance of claim 48 is respectfully requested.

Claim 61 is an independent claim which has been amended to reflect the limitations of amended claim 1, but in method form. Accordingly, it is submitted that the arguments presented above in favor of the patentability of claim 1 over the art of record are equally applicable with respect to the patentability of claim 61. Accordingly, for at least these reasons, allowance of claim 61, as amended, is respectfully requested.

Claims 62-77, 91-93, 101, 102, 108 and 121 each depend either directly or indirectly from and therefore include the limitations of amended claim 61. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to claim 61. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of claim 61, further distinguish the claimed invention from the art of record. Moreover, claims 62-77, 91-93, 101, 102, 108 and 121 reflect the limitations of claims 2-17, 31-33, 41, 42, 48 and 60, respectively, but in method form. Accordingly, the arguments made in favor of the patentability of specific ones of claims 2-17, 31-33, 41, 42, 48 and 60 over the art of record are considered to be equally applicable with respect to corresponding ones of claims 62-77, 91-93, 101, 102, 108 and 121. Hence, for at least these reasons, allowance of claims 62-77, 91-93, 101, 102, 108 and 121 is respectfully requested.

Claim 122 is an independent claim which recites a modified chamber arrangement for providing a modified maximum cooling rate that is greater than a given maximum cooling rate of an unmodified chamber arrangement. Although claim 122 was rejected, Applicant is unable to find any specific details as to the basis of the rejection. Accordingly, it is not clear to Applicant whether the Examiner intended to reject this claim and, hence, Applicant is unable to address the rejection. If the claim is not indicated as being allowable responsive hereto, it is respectfully submitted that an Office Action made responsive hereto should not be made final in view of these circumstances.

Claims 123-128 each depend either directly or indirectly from and therefore include the limitations of claim 122. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to claim 122. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of claim 122, further distinguish the claimed invention from the art of record.

For example, claim 123 includes limitations which reflect certain limitations, discussed above, with respect to claim 1, accompanied by further limitations. For example, claim 123 recites that the given heating arrangement exhibits a heating arrangement emission spectrum at an operating temperature and the treatment object is heated to a treatment object

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temperature so as to exhibit a treatment object emission spectrum which is different from the heating arrangement emission spectrum. The chamber defining means is configured to respond in a first way to the heating arrangement emission spectrum while responding in a second way to the treatment object emission spectrum to provide the modified maximum cooling rate. Accordingly, at least to the extent that claim 123 reflects the limitations of claim 1, related arguments made in favor of the patentability of claim 1 over the art of record are considered to be equally applicable with respect to the patentability of claim 123. Further, claim 123 requires that the chamber responds in first and second ways to provide a modified cooling rate. For all of these reasons, allowance of claim 123 is respectfully requested.

As another example, claim 124 recites that the chamber defining means includes an interior periphery that is configured with a selective reflectivity which responds in said first way and said second way. The switchable characteristics provided by the '107 patent are submitted to be of an entirely different nature. The selective reflectivity that is claimed provides for simultaneously different responses to two spectrally different portions of incident irradiation. Accordingly, allowance of claim 124 is respectfully requested.

As further examples, Claim 125 recites that the inner layer includes an oxide of at least one element. Claim 126 recites that the inner layer includes at least one of aluminum oxide and titanium dioxide. In attempting to meet these limitations, with respect to claims 11 and 10, respectively, the Examiner refers to col. 4, lns. 4-7 and 12-15 of the '107 patent, which describes a "counter or second electrode". This electrode is illustrated as item 4 in figure 2 of the patent and, clearly, is an intermediate, rather than an inner layer. Accordingly, withdrawal of the rejection of claims 125 and 126 over the '107 patent is respectfully requested.

As still another example, claim 128 recites that the unmodified chamber arrangement cooperates with the treatment object to produce a given heat loss efficiency from the treatment object and wherein said chamber defining means, when used with said treatment object, produces a modified heat loss efficiency that is greater than said unmodified heat loss efficiency. Applicants find no reference to these limitations in the current Office Action. Accordingly, if claim 128 is not allowed responsive hereto, it is respectfully submitted that a responsive Office Action should not be made final.

Claim 129 is an independent claim which reflects the limitations of claim 122, but in method form. Accordingly, it is submitted that the arguments made above in favor of the patentability of claim 122 over the art of record are equally applicable with respect to the patentability of claim 129. For at least these reasons, allowance of claim 129 is respectfully requested.

Claims 130-134 each depend either directly or indirectly from and therefore include the limitations of claim 129. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to claim 129. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of claim 129, further distinguish the claimed invention from the art of record.

For example, claims 130-134 include limitations which reflect the limitations of claims 123, 124 and 126-128, respectively, but in method form. Accordingly, the arguments presented above which favor the patentability of claims 123,

124 and 126-128 over the art of record with respect to corresponding features, are considered to equally favor the patentability of claims 130-134. Hence, for at least these reasons, allowance of claims 130-134 is respectfully requested.

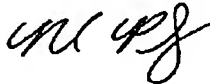
Claim 135, as amended, is an independent claim which reflects certain limitations that are present in amended claim 1. Accordingly, it is submitted that the arguments made above with respect to these limitations are equally applicable with respect to claim 135. Further, claim 135 adds further limitations including a requirement that the portion of the wall is configured to respond to the heating arrangement radiated energy and the treatment object radiated energy with selective reflectivity. As discussed above, the switchable configuration described by the '107 patent is not described as being operable in this manner. Accordingly, for at least these reasons, allowance of claim 135 is respectfully requested.

Claim 136, as amended, is an independent claim which reflects the limitations of claim 135, but in method form. Accordingly, the arguments made above which favor the patentability of claim 135 over the art of record are considered to be equally applicable with respect to the patentability of claim 136. Hence, for at least these reasons, allowance of claim 136 is respectfully requested.

For the foregoing reasons, it is respectfully submitted that all of the Examiner's objections have been overcome and that the application is in condition for allowance. Hence, allowance of these claims and passage to issue of the application are solicited.

If the Examiner has any questions concerning this case, the Examiner is respectfully requested to contact Mike Pritzkau at 303-410-9254.

Respectfully submitted,



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